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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/556,838

12/08/2006

Anton Dukart

10191/3989

3715

26646 7590 12/22/2008  
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EXAMINER

DAVID, MICHAEL D

ART UNIT

PAPER NUMBER

3641

MAIL DATE

DELIVERY MODE

12/22/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/556,838	<b>Applicant(s)</b> DUKART, ANTON	
	<b>Examiner</b> MICHAEL D. DAVID	<b>Art Unit</b> 3641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 15 and 17-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15 and 17-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

The following is a Final Office action in response to communications received on 9/8/2008. Claim 15 has been amended. Claim 16 has been cancelled. No new claims have been added. Therefore claims 15 and 17-28 are pending and addressed below.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 15 and 17-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "relative dielectric constant" in claim 15 is a relative term which renders the claim indefinite. The term "relative dielectric constant" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The term relative dielectric constant is ambiguous and has been deprecated by many standards organizations. The reason for the potential ambiguity is twofold. First, some older authors used "dielectric constant" or "absolute dielectric constant" for the absolute permittivity rather than the relative permittivity. Second, while in most modern usage "dielectric constant" refers to a relative permittivity, it may be either the static or the frequency-dependent relative permittivity depending on context ([http://en.wikipedia.org/wiki/Dielectric\\_constant](http://en.wikipedia.org/wiki/Dielectric_constant)).

Claims 17-28 are rejected under 35 USC 112, second paragraph, for depending upon a rejected base claim.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 15, 17-19 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Boran (EP0995639A2).

Regarding claim 15, Boran discloses a device for impact detection (36, 42, 43, 40, 54; fig. 1,4; col. 4 lines 21-31) comprising: at least one piezo cable (44; fig. 3,5; col. 3 lines 33-44) wherein the piezo cable is configured such that the device detects a capacitance change by an impact object with the aid of the piezo cable (A capacitance change is detected by the control unit (40) with cable (46) as a result of damage to the dielectric (48) caused by an accident or by a change in the signal (82). As a result of a deformation of the shield (50), the capacitance of the capacitor (46, 48, 50) changes; col. 6 lines 5-23; fig. 3, 7). Regarding the claimed invention of the capacitance change being *“used to characterize the relative dielectric constant of the impact object”* as recited in the claim, the applicant is advised that a recitation of the intended use of an invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the

prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 370 F.2d 576, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 312 F.2d 937, 939, 136 USPQ 458, 459 (CCPA 1963). In this case, the patented structure of Boran was considered capable of performing the cited intended use. In addition, the term “relative dielectric constant” is an ambiguous term (see 112 rejection section above).

Regarding claim 17, Boran discloses the device according to claim 16, wherein the piezo cable includes a first shield (50) as an electrode for detecting the capacitance change (see claim 15 above).

Regarding claim 18, Boran discloses the device according to claim 17, wherein the first shield has one of a cylindrical (fig. 3, 7) and semicylindrical design (fig. 3, 7).

Regarding claim 19, Boran discloses the device according to claim 15, wherein the piezo cable is configured such that an impact causes a piezoelectric pulse (fig. 5, 6; col. 4 line 58 – col. 5 line 32).

Regarding claim 23, Boran discloses the device according to claim 15, wherein the piezo cable is configured such that it undergoes a longitudinal change in an impact, which causes a resistance change (length and resistance change by, for instance plastic elongation of the wire (46, 48, 50); fig. 3,5).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 3641

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 20-22 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boran (EP0995639A2) in view of Brown (US 6534999 B2).

Regarding claim 20, Boran discloses the device according to claim 19, as discussed and set forth above, except Boran does not explicitly disclose wherein the device achieves a spatial resolution of an impact by means of a delay-time measurement. Brown teaches, within the same field of endeavor (piezoelectric sensors), a cable sensor wherein the device achieves a spatial resolution of an impact by means of a delay-time measurement (fig. 1,5; col. 5 line 45 – col. 6 line 13; col. 7 lines 1-25) in order to "determine the relative location of an event". Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Boran, with a device similar to that Brown's in order to provide a means for determining the relative location of an event.

Regarding claim 21, Brown further teaches the device according to claim 20, wherein the piezoelectric pulse is evaluated directly, on the one hand, and is conveyed

Art Unit: 3641

to an evaluation circuit via a delay line, on the other hand, so as to ascertain a delay time difference therefrom (fig. 1, 5; x, 100, 102; col. 6 lines 23-54, at x=0; col. 7 lines 1-25).

Regarding claim 22, Brown further teaches the device according to claim 21, wherein the piezo cable includes a second shield provided as a delay line, which is configured as a wound wire (50; fig. 1, 5; col. 3 lines 11-28).

Regarding claim 25, Brown further teaches the device according to claim 22, wherein the second shield is configured to be inductive, to characterize an impact object with respect to its conductivity (col. 1 lines 33-35)

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boran (EP0995639A2) in view of Bergner (GB 231707A).

Regarding claim 24, Boran discloses the device according to claim 23 as set forth above, except Boran does not explicitly disclose wherein a signal characterizing the resistance change is converted to a higher frequency for evaluation. Bergner teaches, within the same field of endeavor (piezoelectric cables/sensors), a device wherein a signal characterizing the resistance change is converted to a higher frequency for evaluation (35, 11; fig. 7, 8;  $R_k$ ,  $i_k$ ,  $V_{ref}$ ; page 6 line 29 – page 8 line 2) in order to provide a means for not interfering with other measurements of lower frequencies. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Boran, with a device that convert a signal to a higher frequency similar to that of Bergner's in order to provide a means for not interfering with other measurements of lower frequencies.

Regarding claims 26-28, these claims recite product-by-process limitations. Regarding “wherein the piezo cable is situated in a trim of a bumper”, or “the piezo cable is injected into the trim”, or “the piezo cable is clamped into the trim”, the applicant is advised that, even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 227 USPQ 964, (Fed. Cir. 1985). In this case, the cited limitations failed to distinguish the claimed structure from the patented piezoelectric cable/sensors of Boran. See MPEP § 2113

In addition, regarding claim 26, Boran discloses the claimed invention except he does not explicitly disclose wherein the piezo cable is situated in a trim of the bumper. It would have been obvious to one having ordinary skill in the art at the time the invention was made to situate the piezo cable in the trim of the bumper, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japiske*, 86 USPQ 70.

### ***Response to Arguments***

Applicant's arguments filed 9/8/2008 have been fully considered but they are not persuasive.



In response to applicant's argument that "the cited section of Boran has nothing to do with detecting a capacitance change by an impact object", the examiner respectfully disagrees. Boran's system/device is a "vehicular deformation sensor system" (title). It is a system for "detecting impacts to a vehicle" (abstract). In addition see the rejection of claim 15 above where it is noted that a capacitance change is detected by the control unit 40 with cable 46 as a result of damage to the dielectric 48 caused by an accident or by a change in the signal 82.

In response to applicant's arguments regarding the product by process limitations, examiner respectfully disagrees. Applicant argues that claim 26 specifies the location of the piezo cable, which has nothing to do with the process of making the piezo cable. Examiner agrees that this has nothing to do with the process of making the piezo cable, but this has everything to do with the process of making a "device for impact detection". The piezo cable is a component of the entire invention and installing piezo cable is part of the process of making the impact detection device. Furthermore, see the additional rejection of claim 26 above (rearranging parts of an invention). The same goes for claims 27-28 in that they include product by process limitations for the same reason that claim 26 includes product by process limitations.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL D. DAVID whose telephone number is (571)270-3737. The examiner can normally be reached on Monday-Friday, 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on 571-272-6873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3641

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. D. D./  
Examiner, Art Unit 3641  
12/17/2008

/Bret Hayes/  
Primary Examiner, Art Unit 3641